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RESEARCH ARTICLE

Exploring pharmacist experience and acceptance for debunking health misinformation in the social media

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Abstract

Introduction: The increasing evidence of misinformation on pharmacy issues in Social Media (SM) may provide potential for pharmacist involvement. **Aim:** This study aims at exploring pharmacist experience and acceptance to debunk pharmacy misinformation in SM. **Methods:** Four Focus Group Discussions (FGDs) with 41 selected pharmacists were conducted. The FGDs collected participant's experience with misinformation, action taken and participant's acceptance for debunking misinformation. The FGDs were audio recorded, subsequently transcribed and thematically analysed. **Results:** The majority of respondents often clarified the misinformation. Pharmacist motivation, relationship with the sender, opportunities to respond and ability to respond the misleading message are themes determining pharmacist acceptance for debunking misinformation in SM. **Conclusion:** Pharmacist has the potential to contain and prevent misinformation about health and pharmacy issues in SM.

Introduction

The use of Social Media (SM) for professional communication has gained popularity among pharmacists. A number of papers highlighted that pharmacists used SM for various purposes such as sharing information with the public and patients, disseminating research findings, communicating with other professionals and promoting debates in the fields of pharmacy (Benetoli *et al.*, 2015; Benetoli *et al.*, 2017; Hermansyah *et al.*, 2019). SM is without a doubt, offers the potential to improve patient care. However, the unfettered access to the internet and SM has also increased the spread of false claims or misinformation even faster and further than accurate information.

Information on SM can be perceived as a diverse mix of sound evidence, facts and phenomenon as well as a cacophony of opinion, pseudo-scientific research and falsehoods, which can propagate misinformation (Chou

et al., 2018). Misinformation as defined by Nyhan and Reifler (2010) is "cases in which people's beliefs about factual matters are not supported by clear evidence and expert opinion". Such definition has highlighted that misinformation contains incorrect information which may negatively affect the perceptions of the target/receiver. Health misinformation including hoax often appears in the discourse of SM.

The diffusion of misinformation has been driven by a number of factors including skepticism over the available treatment, distrust to institutions or involving stakeholders, lack of scientific evidence and poor access to information from the experts (Bode & Vraga, 2018). Information silos, echo chamber effects and controversies have often amplified misinformation with people rarely clarified the information leading to negative consequence to their health (Vraga & Bode, 2017).

The shifting role of pharmacist towards patient-centred care may push pharmacists to optimise their social media account in order to better communicate with the patients and communities. Moreover, the recent “infodemic” due to Covid-19 outbreak has suggested that pharmacist, who sits at the frontline of the healthcare services, can alter misperceptions that arise from incorrect claims of treatments for curing and preventing Covid-19 (Erku *et al.*, 2020).

The study of pharmacist role in debunking health misinformation is substantial to pharmacy practice, and it has been limited in the context of developing countries. In addition, responding to misinformation can be challenging to pharmacists implying the need to study the acceptance and strategy used by the pharmacist to counteract the circulated misinformation. Therefore, this study aims to explore pharmacist experience and acceptance to debunk pharmacy misinformation in SM.

Methods

Study design and setting

This study obtained permission from the Indonesian Pharmacist Association and was approved by the Board of Social and Political Affairs of East Java and Central Java Province. A qualitative study in the form of Focus Group Discussions (FGDs) was used to answer the objective of this study. The FGDs were conducted in four cities, namely Surabaya, Banyuwangi, Klaten and Semarang, from July to September 2019. Each city represents a unique characteristic and culture of the citizen. For instance, Surabaya and Semarang are the capital city of East Java and Central Java province, respectively. Both can be considered a metropolitan city which predominantly relies on trade and commercial sector. This is different to Klaten and Banyuwangi, which are more focused on tourism and agriculture as they are located relatively far from the capital city.

Participants

The researchers compiled a list of potential pharmacists as participants as recommended by the Indonesian Pharmacist Association and expanded with the names from researchers’ networks and social media searches. The researchers purposively selected participants from a wide range of settings, including community pharmacy, hospital pharmacy, pharmaceutical industry and/or distributor, insurance company, health office and academician. A few of these participants were quite active in social media since they are appointed by the Ministry of Health as “Pharmacist Agent of Change”, whose main task is to promote and

influence good pharmacy practice. Shortlisted pharmacists were contacted about the FGDs. If the pharmacists agreed to the FGD, they were provided with an information sheet and consent form. Eligible participants were invited in 90-100 minutes FGDs. Each FGD was attended by 10-11 participants and was conducted in Bahasa Indonesia language. Participants received token money of IDR 200,000 (USD 15) in recognition of their involvement. Written consent was obtained prior to begin the FGDs.

Data collection

Participants were first asked to fill out a brief questionnaire asking about their past experience with misinformation circulated in SM and the action that they did to cope with the misleading message and the messenger. All researchers involved in the FGDs with one researcher acted as moderator. Subsequently, participants were invited to discuss their answers in the questionnaire. The discussion continued with another topic, including participants’ activity in social media, their roles and strategies for debunking health misinformation in social media.

Data analysis

The FGDs were audio-recorded, de-identified and subsequently transcribed verbatim. Thematic analysis was used to uncover the findings. This began with each researcher independently reviewed the transcript, and audio recording iteratively coded the data and built emergent themes supported with illustrative quotes to reflect the themes. Once each researcher has completed this step, the findings were brought into a discussion within the research team. In this stage, all research teams would have to re-read transcripts to resolve any discrepancies with respect to the final themes. Final themes were agreed upon by all researchers.

Results

Overall, 41 pharmacists participated in the FGDs (10 males, 31 females). The majority of respondents (33 respondents) working in patient care settings. This includes community pharmacy, hospital pharmacy and public health centre. The remaining were working as academic (two persons), local health officer/administrator (four persons), in the pharmaceutical company (one person) and the insurance agency (one person). Respondents have mixed work experience. Fourteen had 1-5 years experience, eleven had 6-10 years experience, and sixteen had more than ten years experience. All participants had a WhatsApp account,

followed by Facebook (34 participants) and Instagram (31 participants) as the second and the third most used SM, respectively. Most respondents spent 1-3 hours in the SM daily (19 respondents).

There are four themes identified from the FGDs which affects the acceptance and respondents' experience for debunking health misinformation in the SM, namely 1) pharmacist motivation; 2) pharmacist relationship with the message sender; 3) opportunities to respond the misleading message; and 4) pharmacist ability to respond the misleading message. These themes are presented with illustrative quotations and a brief detail about the respondent characteristic.

Pharmacist motivation to respond to misinformation

Motivation is concerned with why people choose a particular course of actions over others and why they continue to do the actions, some of which is for a long time. With respect to health misinformation in pharmacy, it is the driving force by which pharmacists attempt either to counteract, to report, to share or even to ignore misleading information circulated in their SM.

One participant mentioned her calling as a pride pharmacist has encouraged her to counteract misleading information. She articulated clear reasons why pharmacists are needed for such roles as it is the pharmacist responsibility to debunk misinformation.

"I am a pharmacist, and it is my duty to educate community. (I) don't know who else will do (to debunk the misinformation)" (Female hospital pharmacist)

Other participants, however, perceived not all misinformation must be clarified, particularly in a position where the individual pharmacist is prone to conflict, such as in a familial circle.

"I don't want to fall into a debate with my family. I knew that it was a hoax, but I chose to ignore it. Sometimes I did clarify, but it keeps coming. Even the hoaxes that I have clarified, they keep recirculating" (Female academic)

The motivation of pharmacists to respond to misinformation is also determined by the experience of others, particularly from other healthcare professionals. A participant who works in a hospital pharmacy mentioned that she was not in agreement with the alternative therapies offered by her colleagues as it was not supported by scientific evidence. However, many of her friends, who are also healthcare providers, felt better after they took the therapy, which has made her share the information regardless of the truth behind the therapy.

"Some of my friends at the hospital, they are [name of healthcare profession], went to the alternative therapist. At first, I didn't see that it is right to do since it sounds mystical to me. But I saw that many of them were getting better, so I shared the information as well to those who desperately need the treatment" (Female hospital pharmacist)

Pharmacist relationship with the message sender

A Pharmacist is also an individual who lives in an environment that may or may not recognise pharmacist status. The relationship between pharmacists and the member of the environment, i.e. families, communities, workmates or school mates may have determined pharmacist response to the health misinformation. This eventually will allow them to clarify misinformation directly with the message sender. The majority of participants viewed that their environment recognised their status as a pharmacist, which enabled them to counteract health misinformation.

"My family and my friends know that I am a pharmacist. They will contact or ask me when they found doubtful message about pharmacy" (Female local health officer)

However, a conflict may arise with the sender, particularly if the sender is considered the elders in the family or those who are acknowledged as healthcare professionals. This is also problematic in the context of Indonesian culture

"I often clarified some hoaxes in my family WhatsApp group. But it is quite challenging if those who shared the hoax message is a health professional. I ever had a debate with my uncle and his son who is a [name of healthcare profession] about the benefits of vaccination...I showed them the journals...(until) my parents advised me not to do so" (Female hospital pharmacy)

Opportunities to respond the misleading information

Opportunities are defined as situation or condition that enables pharmacists to respond to the misleading information. The mounting pressure on pharmacists and pharmacy staff to dispense more medicines as well as to provide more services may have portrayed the challenges in the contemporary practice in Indonesia. This situation can be exacerbated by the spread of misinformation in the SM. One pharmacist mentioned that his workload had affected him to debunk the misleading information.

"I knew some (messages) are not correct. If I have the luxury of time, I shall response those (messages). But most of the time, I already tied up with the increased workload. No time to deal with (the messages), (I) just skip them" (Male pharmacist Agent of Change)

There are also pharmacists who really are committed to fighting against misinformation. One pharmacist claimed that she advocated a program to fight health hoaxes. However, the program was not sustainable as it was not included in the plan of the local government.

"There are many hoaxes related to health and these have concerned me. I made a program and promoted this program to the local government. For instance, I advocated the proper use of antibiotics. It was a success at the beginning. But at the end of the day, the program was discontinued...the program was not included in the government plan...it was exchanged by other priorities" (Female hospital pharmacy)

Opportunities to respond is also determined by the urgency. For example, a misleading message that may affect community pharmacy reputation is likely to be clarified as quickly as possible regardless of the time and the load of the pharmacist. This is to prevent a more devastating impact on the pharmacy operation. One participant mentioned her experience.

"There was a time when someone made a false claim in social media about the quality of product sold in my pharmacy...it was annoying me as it may ruin my pharmacy image. I am about to answer him but luckily the other pharmacists have responded" (Female community pharmacy)

Pharmacist's ability to respond the misleading message

Pharmacist's ability to effectively create a message that clarifies or counteracts the misleading information is also highlighted in the FGDs. Some pharmacists preferred to forward and share information from official media account of trusted sources, e.g. ministry of health and food and drug control agency, in order to debunk misinformation.

"There are public warnings from the official website or their social media accounts...I just shared them" (Male hospital pharmacy)

Creating a message that is effective to debunk misinformation is challenging to many of the participants. Some respondents viewed that making a short message with powerful words is a method to debunk misinformation. Other respondents used

pictures on Instagram to draw attention from the public.

"I made a short message with powerful words. Some people were not aware with the danger (of the misinformation). Video can be an alternative, but people skipped them after three seconds when they found (it was) not interesting" (Female_community pharmacy)

"I made an Instastory about the use of Irbesartan (antihypertensive agent). I put a picture with some links provided (the medicine) to explain about the importance of taking it (Irbesartan)" (Female hospital pharmacy)

Reporting misleading information can be an option to respond to the misleading message. Whilst most respondents agreed that they had a role and are better positioned to report health hoaxes to the authorities, they did not choose this way as there was a lack of information about to whom and how the misleading information can be passed to the authorities.

"I never reported any hoaxes, never at all. (It is) simply because I didn't know where to report. All I did was just forwarded the (misleading) message to colleagues or friends who I knew she or he works for the government or the authorities. I don't bother myself to know whether it [the report] has been followed up or not" (Female community pharmacy).

Discussion

SM is increasingly becoming part of our lifestyle. This study demonstrates that pharmacists have used SM for supporting pharmacy practice which brings both risks and opportunities. The concern about misinformation, hoaxes and false information surrounding health and pharmacy issues may have put not only pharmacists at risk but also patients at greater risk. A pharmacist who is illustrated in many distinctive roles as a gatekeeper of care (Hermansyah et al., 2018), the first point of call (Curley et al., 2016), and the last healthcare worker to see the patients (in dispensing services) (Schindel et al., 2017) can contain the health misinformation in the SM. This study, without a doubt, has added more discussions to such issues. However, what really matters is how pharmacists in the context of developing countries like Indonesia can consistently embrace this novel role amid the increasing pressure for practice change. Where would pharmacists go in contemporary practice?

With respect to the objective of this paper, it can be concluded that there is a potential for pharmacists to play an important role in clarifying hoaxes and

misinformation in SM. However, pharmacist acceptance to undertake such role is mixed, highlighting some limitations to implementation. Therefore, this discussion will focus on identifying limitations and devising strategies to overcome the limitations. There are three issues that need to be addressed by pharmacists based on the findings of this study, namely understanding how health misinformation is shared, evaluating the need to act and develop effective interventions, e.g. clarification, corrections or counter-message to debunk the falsehoods.

Typically, misinformation spreads as it is induced by scepticism, distrust, misperceptions and lack of access to reliable and trusted sources or information (Del Vicario *et al.*, 2016). These issues are closely related to the psychological and sociocultural factors of the recipients. The findings of this study revealed that misinformation could circulate in both exclusive environments such as family circles and in inclusive settings such as among workmates and even within the network of health providers. Pharmacists need to be aware of information exchange between the members of these communities. For instance, this study demonstrated that the elders are the ones who share the misleading information, which might be problematic given the cultural and familial hierarchy. This study argued that recognition as a pharmacist by the members of the communities is indeed critical to help determine the problems and communicate the remedies. Being a pharmacist suggests a strong status to refute false or misleading health information and supplied with evidence and appropriate sources to accompany the refutation. Apart from the status, pharmacists should also take into account the dynamics and the reception of the people. Avoid correcting people and focus on correcting the problem (Chou *et al.*, 2020). Pharmacists can employ straightforward efforts to respond to the misleading information with a risk of undermining the relationship with the sender. Alternatively, using "private" conversation can be an effective interpersonal approach. This is why evaluation of the action is the subsequent step to be conducted by the pharmacist.

In the situation where health misinformation has been widespread, accumulated and have the potential for devastating impact, as illustrated in the findings, pharmacist responses must be timely, strategic and evidence-based (Walter *et al.*, 2020). In addition, such a situation may also demand pharmacists to work with others, including the authorities, to contain the message. Pharmacist needs to identify who is the most vulnerable population and strategically intervening these groups if necessary. For instance, the case of misinformation related to vaccination or hypertension,

as illustrated in this study, revealed the possibility for pharmacists to target people who are in need of vaccination and patients with hypertension, respectively. Pharmacists' focus is to lead these individuals to achieve their therapeutic goals and not to disengage with pharmaceutical care which may be detrimental to their health. Regardless of the state of the health misinformation – the urgency, the impact and the prevalence – pharmacists can always make an attempt to debunk health misinformation. However, it is also important to consider the backfire effect whereby the attempts proposed by the pharmacist can unintentionally discourage people (or the sender) and increase the acceptance of the misleading information (Peter & Koch, 2016). Therefore, developing an effective intervention is critical as the final process in debunking misinformation.

Pharmacist needs to carefully consider when and how to intervene. SM is a public space; therefore, communicating and clarifying misinformation in the SM is not only aimed to resolve the problem but also to sustain public trust in evidence-based health information (Kass-Hout & Alhinnawi, 2013). For instance, pharmacists might consider taking systematic improvements focusing on preventive action rather than correcting individuals in one situation. Nevertheless, a simple rebuttal can also be effective in a situation that requires a proactive response. It is also possible that pharmacist chooses not to respond at all, for example, when dealing with misinformation that most people do not believe it is real. Fairly speaking, there is no one size fits all. However, this study believes that "speak the truth" is, in fact, pharmacists' responsibility. Although this study agreed that not all pharmacists could embrace such commitments nor have the privilege (including time, workload, and communication manner) to speak based on evidence in the SM platforms, pharmacists cannot avoid the fact that their corrections or clarifications might have the meaning, particularly to the patient. This implies an imperative for pharmacists to overcome patients' confusions, concerns, and mistrusts as it is framed under the pharmacist-patient relationship. A proactive approach is more influential rather than expecting for the falsehoods to fade away.

Several limitations of this study must be noted. First, this study is not immune to selection bias in the recruitment of the participants. Maximum variation sampling is perhaps the alternative recruitment technique to obtain more comprehensive findings. However, there is also value for purposive selection as it may provide focused information about the case. Second, there is always an issue with the trust and credibility of participants' opinions in the qualitative study. This study cannot be highly confident how

participants deal with the misinformation in reality. Future research might be required to evaluate the actual implementation by the pharmacist.

Conclusions

Although there is still much to be learned, this study highlighted the important role of pharmacists in debunking health misinformation. Pharmacists can contain and prevent misinformation by strategically intervening with the public. However, some limitations have made the implementation challenging. Understanding how health misinformation is shared, evaluating the need for action and developing effective interventions are the keys to debunking the falsehoods.

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